BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	CG Docket No. 17-59
Advanced Methods to Target and Eliminate	)	
Unlawful Robocalls	)	FCC 17-24
	)	

Comments of Noble Systems Corporation

Filed July 31, 2017

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SUMMARY

Reviewing the areas of consensus and disagreement on the comments to the Commission's NPRM/NOI on "robocalls" provides insight as to which approaches hold long term promise for addressing the problem of illegal and unwanted calls. While there is disagreement as to whether all forms of legal calls should be blocked, there was consensus that mechanisms are needed to address illegal calls.

In other areas, disagreement was expressed as to whether certain technologies were effective in mitigating illegal calls and whether information sharing between entities was desirable to facilitate call blocking of legal calls using various database oriented solutions. Several comments expressed views that such technologies should not be mandated for deployment by service providers. There was, however, a general consensus that the SHAKEN & STIR approach should be the focus of long term efforts.

A high level analysis of the comments leads to the following conclusion:

1. Various issues associated with some of the "service-specific" database oriented call blocking technologies have been identified, leading to questions as to their effectiveness and viability.
2. The Commission should focus on SHAKEN & STIR technology as the long term solution to the problem of illegal and unwanted calls.
3. Immediate best practices need to be developed for mitigating blocking of legitimate calls.

The Commission should focus on advancing the long term solution based on SHAKEN & STIR technology, recognizing that this approach offers the basis for facilitating trace-back of any type of illegal call, but can also be used as the basis of a carrier-specific call blocking service. The Commission should suspend its efforts to develop further "service-specific" database oriented approaches at this time and focus on developing a long term solution based on SHAKEN & STIR technology and encouraging development of best practices for mitigating blocking of legitimate calls.

I. INTRODUCTION

The initial comments to the Commissions' NPRM expressed consensus for addressing the problem of illegal calls, but some comments expressed concern over blocking mechanisms that may block legitimate and wanted calls. Some expressed a need that if a "blacklist" approach is defined for call blocking, then a corresponding "white list" approach is necessary to ensure legitimate or wanted calls are not blocked. A number of comments expressed the need for mechanisms to mitigate call blocking of legitimate calls.

Other comments expressed concern about sharing information to facilitate another carrier's call blocking service. Concerns ranged from CPNI regulatory prohibitions, reluctance to disclosing trade secret and customer specific information, and the fundamental effectiveness of certain blocking approaches. Some comments cautioned against mandating adoption of certain technologies and the burdens these capabilities will put on carriers and call originators when legitimate calls are blocked.

From these and other high level comments, some conclusions are coalescing, which the Commission should consider when developing its roadmap for addressing unwanted and illegal calls.

II. "SERVICE-SPECIFIC" DATABASE SOLUTIONS ARE LIMITED IN THEIR EFFECTIVENESS

Various database oriented solutions have been identified for addressing specific types of calls. A database solution for maintaining **unallocated** numbers would allow a carrier to query the database to ascertain whether a call is using a calling party number that has not been. Similarly, a database solution for maintaining **unassigned** numbers would allow determining whether a call is using a number currently unassigned by the carrier allocated that number. Another database may define a central repository for **unauthorized** numbers (the so-called "Do-Not-Originate" or "DNO" list). These are variations of a "blacklist" database oriented solution. Even some approaches for identifying an **invalid** number may, in fact, require a database to ensure that the number is not a valid foreign number. At a high level, the possibility of blacklisting a legitimate call has caused some commentators to strongly advocate for a "**white list**" database capability, to

ensure a legitimate number is not blocked via the blacklist. Finally, even though not identified in the comments, the Commission has just released a NPRM for a database oriented solution for maintaining **reassigned** numbers, which is also motivated by the problem of unwanted calls.

When viewing the scope of these database oriented solutions, there is typically a **carrier-specific** scope and an **inter-carrier** scope to each solution. A "carrier-specific" scope maintains numbers that the carrier is aware of, while the inter-carrier scope requires multiple carriers to share information, typically with a centralized database. For example, it is one thing for a carrier to implement a carrier-specific database of its own unassigned numbers but quite another for all carriers to interact with a centralized database of unassigned numbers.

The Commission and the industry have experience with inter-carrier number databases, which are complicated, time-consuming to define, develop, deploy, and lastly, expensive. The best example is the national Do-Not-Call ("DNC") list, which is a service-specific blacklist of telephone numbers that are not to be called for telemarketing purposes. This database took over 10 years from inception to deployment and can be considered an eco-system of associated regulations, protocols, and standards detailing its use and administration. It costs a telemarketer over $16,000 per year for access to all area codes. The development of the DNC database cannot be said to have been fast, easy, or cheap.

The DNC database has been partially effective in stopping illegal or unwanted calls. Simply put, legal operators adhere to the law and use the DNC database, while illegal operators do not. Performing screening functionality in the carrier seems to be one solution to blocking certain call types, but unfortunately, allowing carriers to implement a carrier-specific blacklist for certain types of numbers will also be limited in effectiveness. For example, a carrier implementing a carrier-specific database of their own unassigned numbers cannot use it to block calls having an unassigned number of another carrier.

Expanding the scope of such an unassigned blacklist database from carrier-specific to an inter-carrier number database poses a number of problems. First, as we know from the DNC database, developing the inter-carrier communication and coordination is not trivial and takes years to establish. Second, carriers have already expressed concerns about sharing what is considered

trade secret information (unassigned numbers). Third, carriers have expressed concern about mandating any such infrastructure. If the usage of such an inter-carrier infrastructure is not mandatory, then questions as to the viability, cost sharing, and effectiveness are likely to arise. There is no question that the viability of the national DNC database eco-system is due to in part to its usage being mandatory for telemarketers. If its usage were optional, that eco-system would collapse.

Similar types of questions arise for each of the service-specific database solutions identified above for blocking various types of illegal calls. Further, several commentators have identified a fundamental flaw with using service-specific database solutions. If a scammer (i.e., someone originating an illegal call) using an invalid, unassigned, unallocated, or unauthorized number finds their calls are being blocked, they will simply use valid and assigned numbers. It is possible to expend millions of dollars, spend years to define and deploy a service-specific solution that is made obsolete in one day. The Commission is well aware of the practice of "mirroring" or "neighboring" spoofing where a scammer uses a calling party number that is the same or similar to the called number. In such cases, the calling party number may be neither invalid, unassigned, unallocated, nor unauthorized. Such a call would not be blocked by any of these service-specific databases. Furthermore, placing that calling number on a generalized "blacklist" database (on a yet another service-specific database) would result in blocking calls from the subscriber of the "spoofed" number being blocked. Thus, these service-specific databases are effective only against certain types of illegal calls.

Service providers are authorized to block various types of calls for their subscribers at the subscriber's request, and under the proposed rules, any carrier may block calls using invalid, unassigned, unallocated, or unauthorized numbers. It is not debated that blocking certain types of these calls may be more effective if an inter-carrier infrastructure is built out. But, this inter-carrier service-specific solution is a patchwork solution at best for addressing the overall problem of illegal calls.

III. THE FUNDAMENTAL PROBLEM IS ANONYMITY –FOR WHICH SHAKEN & STIR TECHNOLOGY IS THE LONG TERM SOLUTION

The problem of illegal calls is facilitated because call originators are able to maintain anonymity. The majority of the complaints involve scammers using someone else's telephone number; these scammers do not use their actual assigned telephone number (this is sometimes called "spoofing"). There are legitimate uses for "spoofing" and the problem is not that a call originator is using another party's telephone number, but it is not having any mechanism to accurately identify the call originator other than the calling party telephone number.

This is why SHAKEN & STIR technology holds out promise. Several comments pointed to this as the long term solution, and none indicated it should not be pursued. Its ability to authenticate calls can be used to evaluate whether a call may be potentially illegal. It provides the potential infrastructure for facilitating the trace-back of a call, which means those making illegal calls cannot remain anonymous. This promises to reduce all forms of illegal calling practices, and would be useful against telephone bomb threats, so-called "swatting" calls, any type of threatening call, as well as illegal telemarketing calls.

There must be mechanisms defined for called parties to quickly identify and report who called them. Further, there must be mechanisms defined for law enforcement agencies to quickly request (under appropriate legal procedures) call originator identifying information or which carrier received and authenticated the call. Providing tools for ripping away the veil of anonymity will be more effective in the long term for reducing unwanted and illegal calls than call blocking.

It is understood that SHAKEN & STIR can be used as a basis for blocking a call, but call blocking is not inherent with deploying that technology. That is, a carrier could block calls for its subscribers using the level of attestation/authentication as a basis for doing so, but it is possible to deploy SHAKEN & STIR without the blocking of calls.

Deploying SHAKEN & STIR is likely to be more effective if it is mandated by the Commission along with procedures for facilitating a trace-back. Thus, the Commission should clarify its intention as to whether this solution will be mandated. No doubt if a carrier is mandated to deploy technology for addressing illegal calls, a single technology solution is desirable. No

doubt there will be pushback if carriers are mandated to deploy SHAKEN & STIR and a number of the service-specific database solutions identified.

Further, pursuing multiple, mandated approaches in parallel may not be an effective strategy. Specifically, expending industry time, resources, and money for development and deployment of multiple, inter-carrier, service-specific database solutions is likely to delay deployment of a solution based on SHAKEN & STIR technology. To address the problem of illegal calls, a national trace-back infrastructure based on SHAKEN & STIR needs to be deployed first and foremost.

Once deployed, it will be optional whether a carrier choses to use SHAKEN & STIR for call blocking for its subscribers or some other technology. Further, once a national trace-back infrastructure is deployed and experienced is obtained in its performance, then the issue can be addressed whether further inter-carrier communication is required for enhancing call blocking.

IV. THERE IS THE IMMEDIATE ISSUE OF MITIGATING THE BLOCKING OF LEGITIMATE CALLS

The Commission has authorized a service provider to offer call blocking services to its subscribers on various call types (for ease of reference, this is called "Type I" blocking herein). Further, the Commission has proposed to allow carriers to *sua sponte* block calls using invalid, unassigned, unallocated, and unauthorized numbers (this is called "Type II" blocking herein). Presumably, there are few if any legitimate calls that will be blocked using Type II blocking, but Type I blocking may block legitimate calls. A number of comments expressed concern about this situation and how to mitigate the impacts of Type I blocking acting on legitimate calls.

It is proposed that the Commission initiate, or delegate to an industry association, such as Profession Association of Customer Engagement (PACE), the development of industry best practices for mitigating Type I blocked calls. This mitigation requires at least that:

1. Call originators need to be informed that their call was blocked.
2. Call originators need to be able to identify the called party's service provider (performing the blocking) in order to initiate mitigation procedures.

3. The call originator must be able to mitigate blocking of their call with the service provider performing the blocking.
    a. This requires verification that the number was blocked and why (e.g., was it incorrectly labeled as e.g., a "telemarketing" call?)
    b. The call originator has a channel for requesting removal of the blocking of the number.
4. The called party needs to be informed about which calls were blocked and why.
5. The called party must be able to mitigate the blocking criteria used to block that number by their service provider.
    a. This may require the called party indicate the originator should be placed on a "white list", or
    b. the called party requests some change so as to allow (unblock) calls from that originator.

The Commission should be aware that item #1, by itself, may require potential modification or clarification to various telephony/Internet standards in order to clearly convey to the call originator that the call was blocked. It is likely that a carrier blocking calls will code the call as "busy" or "disconnected" to the call originator and this only results in the call originator expending further resources to reattempt the call, or recheck the number and then reattempt the call again. Call originators should be unambiguously informed that their call was blocked from being offered to the called party. Further, because other federal regulations limit the number of call attempts for certain types of calls that may be made to a called party within a time period, a call originator will need to know whether their call attempt was blocked.

V. CONCLUSION

The Commission should recognize the limited effectiveness of any given service-specific database approach for addressing illegal calls, let along unwanted calls. Mandating a plurality of service-specific database solutions is not an effective or practical approach and may, in fact, delay deployment of a desirable long term approach. The Commission should instead focus on

development of a national trace-back capability based on SHAKEN & STIR technology, recognizing that carriers may optionally use that technology for blocking calls to their subscribers.

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July 31, 2017